

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

SCHRELL, Andreas  
Geiss & Grosse  
Leitzstrasse 45  
70469 Stuttgart  
ALLEMAGNE

18. MAI 2006

Bearbeiter: 

Date of mailing (day/month/year)  
11 May 2006 (11.05.2006)

Applicant's or agent's file reference  
25564 WO

**IMPORTANT NOTIFICATION**

International application No.  
PCT/EP2004/006030

International filing date (day/month/year)  
04 June 2004 (04.06.2004)

Applicant

SÜDZUCKER AKTIENGESELLSCHAFT MANNHEIM/OCHSENFURT et al

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

**2. Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Ellen Moyse

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 89 75

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 25564 WO	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/EP2004/006030	International filing date ( <i>day/month/year</i> ) 04 June 2004 (04.06.2004)	Priority date ( <i>day/month/year</i> ) 16 June 2003 (16.06.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant SUDZUCKER AKTIENGESELLSCHAFT MANNHEIM/DCHSENERST		

**Gleiss & Große**  
Patentanwälte Rechtsanwälte  
Stuttgart

18. MAI 2006

Bearbeiter: \_\_\_\_\_

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis. 1(a).																								
2.	This REPORT consists of a total of 12 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input checked="" type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																							
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<input type="checkbox"/>	Box No. VII	Certain defects in the international application																							
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 01 May 2006 (01.05.2006)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; font-size: 1.1em;">Ellen Moyse</div>
Telephone No. +41 22 338 89 75	

# PATENT COOPERATION TREATY

Translation

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

**Greiss & Große**  
Patentanwälte Rechtsanwälte  
Stuttgart

18. MAI 2006

Bearbeiter: \_\_\_\_\_

Date of mailing (day/month/year)
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Applicant's or agent's file reference  
**25564 WO**

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No. <b>PCT/EP2004/006030</b>	International filing date (day/month/year) <b>04.06.2004</b>	Priority date (day/month/year) <b>16.06.2003</b>
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International Patent Classification (IPC) or both national classification and IPC

Applicant

**SÜDZUCKER AKTIENGESELLSCHAFT MANNHEIM/OCHSENFURT**

1. This opinion contains indications relating to the following items:

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input checked="" type="checkbox"/> | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application  |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. II

Priority

1. ☒ The following document has not yet been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/006030

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	25, 26, 28-32, 35, 37-38, 40-44	YES
	Claims	1-24, 27, 33, 34, 36, 39, 45, 46	NO
Inventive step (IS)	Claims		YES
	Claims	1-46	NO
Industrial applicability (IA)	Claims	1-46	YES
	Claims		NO

2. Citations and explanations:

Reference is made to the following documents:

D1 WO9955342 (KOZIANOWSKI et al.) 4 November 1999 X

Claim 1. Use of a **sugar alcohol mixture** containing **1,6-GPS** (6-O- $\alpha$ -D-glucopyranosyl-D-sorbitol) and **1,1-GPM** (1-O- $\alpha$ -D-glucopyranosyl-D-mannitol) in **foods, drugs and stimulants as a therapeutic active ingredient**.

Dependent claim 2. Use according to claim 1, the therapeutic active ingredient being an **antimicrobial active ingredient**.

Dependent claim 3. Use according to claim 1, the therapeutic active ingredient being an **immunostimulant**

D2 DE10104055 (SUEDZUCKER AG) 14 August 2002 X

relates to the use of carbohydrates, in particular 1-O- $\alpha$ -D-glucopyranosyl-D-sorbitol, **6-O- $\alpha$ -D-glucopyranosylsorbitol**, lactobionic acid, maltobionic acid, "condensed palatinose", difructose dianhydrides, fructooligosaccharides, hydrogenated fructooligosaccharides, chitooligosaccharides, chitosanoligosaccharides, galactomannanoligo-

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

saccharides and oligogalacturonide-containing pectin hydrolysates for **treating bacterial intestinal infections in monogastric animals and also animal feeds or dietetic animal feeds which contain one of these carbohydrates as additive** (page 2/lines 3-8/[0001] and page 3/lines 10-28/[0011]).

In a particularly preferred embodiment, a **disaccharide alcohol mixture is used which contains 1-O-alpha-D-glucopyranosyl-D-mannitol (1,1-GPM) and 6-O-alpha-D-glucopyranosyl-D-sorbitol (1,6-GPS), in a particularly preferred embodiment, the abovementioned two disaccharide alcohols being used in weight ratios 1:99 to 99:1, preferably about 50:50 (% by weight). The virtually equimolar mixture of 1,1-GPM and 1,6-GPS is commercially available and is called Palatinit TM or Isomalt** (page 4/lines 64-68/[0024], p.5/lines 3-8/[0025] and claim 7).

D3 WO9909839 (HAARASILTA et al.) 4 March 1999 Y  
discloses a **product containing edible probiotic** (see also page 5/lines 22-35), to which is possibly also added (see page 4/lines 2-11) a **prebiotic** (see also page 6/lines 2-10).

The health-promoting probiotic effect for humans and animals is based on the ability of the microbes to reinforce the status of the intestinal flora by creating an equilibrium of the microbial population, which **reduces the amounts of harmful, e.g. carcinogenic, substances and also pathogenic microbes** (page 1/lines 14-17).

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

D4 WO 2004/052121 (see US2004131659) (NOVARTIS

NUTRITION AG) 24 June 2004

Claim 1 claims a **food or pharmaceutical composition** which contains fructooligosaccharides and **galacto-oligosaccharides** (see page 19/example 1/lines 27-28).

In claims 13-17, in addition, the production of a medicament or a food composition is claimed

(13) for **treatment or prevention of gastrointestinal disorders such as diarrhoea and constipation**

(14) for **maintaining and/or restoring the intestinal flora**

(15) for **preventing or treating inflammatory intestinal disorders, in particular ulcerative colitis, Crohn's disease and/or intestinal cancer**

(16) for **stimulation of the growth of bifidobacteria and/or lactobacilli and/or inhibition of the growth of at least either bacteroids, clostridia, forms of coli bacteria, sulphate-reducing bacteria**

(17) for **prevention or treatment of infections by pathogenic intestinal bacteria**

*Subject matter of the claims*

A1 Use of a mixture of **1,6-GPS and 1,1-GPM as prebiotic**

d2 as **bifidogenic prebiotic**

d3 as **butyrogenic substrate** having properties of **soluble dietary fibres**

d4 as **fibres and dietary fibres and/or indigestible carbohydrates**

d5 as substance having **prebiotic properties**



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INTERNATIONAL SEARCHING AUTHORITY

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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d6	Mixture used in <b>foods, stimulants or feedstuffs.</b>
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d9	Mixture is <b>Isomalt</b>
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d10	Mixture contains 1,1-GPS
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d11	Mixture contains mannitol, sorbitol, hydrogenated and/or non-hydrogenated oligos
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d17	Mixture contains <b>probiotic</b>
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d18	<b>Probiotic = Lactobacillus</b> and/or <b>Bifidobacterium</b>
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d22	Use according to 1-21 for <b>production of a food, stimulant or feedstuff</b>
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d23	Use according to 1-22 (?) for <b>production of a drug</b>
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d24	Use according to 23 for <b>production of a drug for treating and/or preventing intestinal disorders</b>
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d25	Use according to 23 for <b>production of a drug for restoring and/or stabilizing a healthy intestinal flora</b>
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d26	Use according to 23 for <b>production of a drug for maintaining a healthy intestinal epithelium</b>
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d27	Use according to 23 for <b>production of a drug for supporting intestinal health</b>
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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

- d28 Use according to 23 for **production of a drug for restoring and/or promoting a healthy intestinal flora metabolism**
- d29 Use according to 23 for **production of a drug for reduction of toxic and harmful intestinal contents**
- d30 Use according to 23 for **production of a drug for reduction of oxidative stress**
- d31 Use according to 23 for **production of a drug for prevention and/or treatment of chronically inflammatory intestinal disorders**
- d32 Use according to 23 for **production of a drug for intestinal cancer, in particular large bowel cancer**
- d33 Use according to 23 for **production of a drug for prophylaxis and/or treatment of infectious disorders, in particular bacterial intestinal infections and diarrhoeas**
- d34 Use according to 23 for **production of a drug for modulation and support of the immune system**
- d35 Use according to one of the preceding claims, **the food, stimulant or feedstuff being a milk product or [...] bakery product [...] biscuit product [...] bread spread [...] baking fat [...] instant product [...] brewed product [...] fruit product [...] spice mixture [...] muesli [...] sports drink [...]**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

**chocolate [...] ice dessert [...] marzipan [...]  
alcoholic and non-alcoholic sweet drink ...**

- d36 Use according to one of the preceding claims for  
**treatment and/or prevention of intestinal disorders**
- d37 Use according to one of the preceding claims for  
**restoration and/or stabilization of a healthy  
intestinal flora**
- d38 Use according to one of the preceding claims for  
**maintenance of a healthy intestinal epithelium**
- d39 Use according to one of the preceding claims for  
**support of intestinal health**
- d40 Use according to one of the preceding claims for  
**restoration and/or promotion of a healthy intestinal  
metabolism**
- d41 Use according to one of the preceding claims for  
**reduction of toxic and harmful intestinal contents**
- d42 Use according to one of the preceding claims for  
**reduction of oxidative stress**
- d43 Use according to one of the preceding claims for  
**prevention and/or treatment of chronically  
inflammatory intestinal disorders**
- d44 Use according to one of the preceding claims for  
**prevention of intestinal cancer, in particular large**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/006030

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

**bowel cancer**

d45 Use according to one of the preceding claims for  
**prophylaxis and/or treatment of infectious  
disorders, in particular bacterial intestinal  
infections and diarrhoeas**

d46 Use according to one of the preceding claims for  
**modulation and support of the immune system**

*Novelty (i), inventive step (ii), industrial  
applicability (iii) - PCT Article 33(1)-(4)*

*i.*

The subject matter of claims **1-24, 27, 33, 34, 36, 39,  
45, 46** is not novel in the light of document D1 and/or  
document D2 (see above)

*ii.*

Claims **25, 26, 28-32, 35, 37-38, 40-44** do not meet the  
requirements of inventive step with reference to  
documents D3 and D4, in each case in combination with the  
documents D1 and/or D2.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/006030

Box No. VI Certain documents cited

1. Certain published documents (Rule 43bis.1 and 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
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2. Non-written disclosures (Rule 43bis.1 and 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)
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See form 210